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ABSTRACT

Presented at a symposium on Children, Families, and New Video/Computer Technologies, this keynote address assesses technological advances in television and computer science and raises questions concerning their impact on child development and the quality of family life. The new technology described combines video communications technology and computer technology in a new form of interactive television affording simultaneous program capacity, manipulation of program materials, at costs and prices accessible to 80% of American and European households. The author lists positive and negative effects of this technological advancement for children, and discusses the need for research to resolve government policy issues of regulation, and industry-policy issues concerning program development, consumer selection and economic viability. The author takes the position that government and industry both have an obligation to inform consumer parents and their children of the possible impacts of the new technology in terms of how it is used and how much it is used with children of different ages and capabilities. (Author/SS)

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WHAT THE FUTURE HOLDS FOR CHILDREN IN THE TV-COMPUTER AGE: UNPRECEDENTED PROMISES AND INTOLERABLE THREATS TO CHILD DEVELOPMENT*

Clark C. Abt

The new TV and computer technology is advancing more rapidly than ever before, and the decade of the 1980's will create important new developmental opportunities as well as developmental threats to children and families. We have only another brief one or two years to learn what these opportunities and threats involve, so that government and industry policies and family and other consumer decisions can be made on the basis of knowledge of the best interests of the children, rather than on the basis of parental and political expediency and industry profit maximization. We cannot learn reliably what promises and threatens from the impending mass dissemination of the new technology without much more and better psychological, social and economic impact research.

But what is the nature of the new technology that is coming with still unknown impacts for children and families? What can it promise? What can it threaten? Quite simply, the new technology combines video communications (television) technology and computer technology in a new form of interactive television affording an order of magnitude more simultaneous program capacity, (not necessarily variety or choice), manipulation of program materials, at costs and prices accessible to 80% of American and European households. TV sets now cost most people less than a week's wages, and home computers cost less than $1000. There is little doubt that within a few years, for a very few hundred dollars, most of the homes in western civilization will be able to purchase and use a new kind of television set and associated computing systems that will provide dozens of channels--potentially hundreds--of simultaneous programming, with much of it manipulable in two-way communication and decision modes interacting with computerized data bases. In effect, most homes will have the merged capabilities of current TV, video telephones, post offices, computers, data bases, libraries, theatres, stadiums, and satellite photography.

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*An adapted version of the keynote address to the National Council for Children and Television Symposium on Children, Families and New Video/Computer Technologies, Princeton, New Jersey, March 10, 1980

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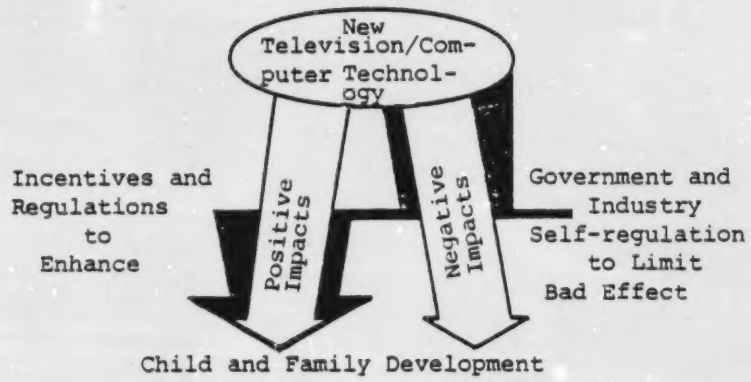
New Television/Computer Technology
Incentives and Regulations to Enhance
Positive Impacts
Negative Impacts
Government and Industry Self-regulation to Limit Bad Effect
Child and Family Development

Information needed for control includes:

1. "Good" effects (of what TV, on which children and families)
2. "Bad" effects (of what TV, on which children and families)
3. Impact of government and industry policies on 1 and 2, and industry economic viability and cultural and technological innovation

The promise is, of course, an enormous increase in entertaining learning opportunities and expansion of culture, and the replacement of excessively passive viewing of TV by active, participative and decision-oriented manipulation of program materials for educational, recreational, and creative activities.

Futures for Children in the TV-Computer Age

Promises of Good News For Children

- o More and better urban and rural entertaining education;
- o More choice -- not limited by time or line of sight;
- o More interaction -- active learning in simulations, data processing;
- o More health and safety -- pediatric medicine by CATV, telemedics;
- o More political particiation;
- o More equity of access -- rural and poor can afford it;
- o Team learning and production -- social skills enhanced;
- o More job-oriented skills;
- o Education, training and counseling -- up-to-date matches of TV job ads, training requirements, ETV, computerized job banks;

- o Better employment, income, less youth unemployment;
- o More cottage industries with technical home computers and TV innovations;
- o Solo parent employment flextime;
- o Multiple career opportunities for aged, disabled, handicapped and plain bored through TV-Computer combination (publishing explosion needs authors);
- o Marriage of best of science and art, TV-Computer, libraries and movies;
- o Excellence with diversity in English, Spanish, Chinese, etc;
- o Heartbreaking beauty -- bigger, better more diverse and duper culture, and
- o Science literacy for all.

The threat is that this compounding of the addictive fascinations of the passive viewing of moving images, together with the fascinations of digital manipulations offering audio-visual response, will draw children into even lengthier and more totally absorbed fascination with an activity that must remain only a substitute for direct social and physical experiences of the real world.

Threats of Bad News and Nightmares of the Cultural Corruption of Children by TV

- o "Machine Time" grows to swallow up all waking hours (and much sleep) -- doubling current 30 hour/week average total viewing times;
- o Unlimited child access to pornography and brutal violence;
- o Low-order gaming and sloppy creations replace formal learning and disciplined production in classrooms (Gresham's Law of Content?) Junk TV programs drive out developmental nutrition ones;
- o Physical decline as machine use replaces active sports;
- o Social isolation and withdrawal leading to increased incidence of psychosis;
- o More stereotyped character -- leading to more social conflict;
- o Over-regulation constraining creativity and investment;
- o Opportunity-wasting chaos and quick-fix cheal a-peals (Star Trek);
- o Reduced communications between parents and kids ("We lose 'em earlier!");
- o Reduced peer communication and learning (versus James Coleman's Adolescent Society with much peer learning.)
- o Reduced respect for reality principles;
- o Increased intergenerational and interclass conflicts, coming faster than conflict resolution by participative politics; and
- o False insulation from real threats
  (Irving Janus' 'near-miss' phenomenon -- innocent people became more tolerant of mass violence, possibly increasing the danger of nuclear war.)

The new television and computer technology is developing rapidly toward mass dissemination because the public's and children's avidity for entertainment, industry economic incentives, and government political campaigning support its mass marketing. The mass marketing of the new technology is very likely to be effective, since it will be heavily invested financially and culturally, and because we have already experienced great consumer demand for the precursors of the new TV/computer technology -- ordinary TV and computerized games. The TV dissemination story is well known, and computer games have sold out the last two Christmas seasons.

For the next decade, we can already estimate with confidence that the new technology will have the major impact on children's and parents' use of time in the home, compared to any other current technological, economic, or social change. In the last decade, vying for first place for impact on children's and parents' use of time in the home were television, and the massive entry of mothers, particularly solo mothers, into the labor force. (Roughly half the female population are in the labor force, and one-fourth of them are solo mothers.) In the decade of the 1980's, much of the impact on children of women's major entry into the labor force will already have taken place, leaving TV/computer technology -- available on a mass basis -- as the most probable new major impact on children's use of time in the home.

While we can predict that the new TV/computer technology will have a major impact on children's and parents' use of time in the home, we cannot now know the impact of its changes on family and child development. Much research is needed here. We know only a little (although we believe we know much more) about the impact of television violence on family violence and teenage delinquency. We know only a little about the impact of television on learning, creativity, and consumer behavior. We could summarize the apparent and limited findings of our research with the simple statements that a little television may be good for most children, and a lot of television (defined as over two hours a day) is very probably bad for many children. Even these findings are open to question scientifically. Not even Sesame Street survives Professor Thomas Cook's faint praise (in his scientific impact evaluation).

We know almost nothing about the impact of television on family stability, marital harmony, or parenting behavior. There is anecdotal evidence that

parents often substitute TV for parental or other human baby-sitting, but how much and with what effect we do not know.

We know almost nothing about the impact of sex in television on family and child sexual and other behavior, and the learning of socially desirable relationship building. (We do know that an enormous market has developed in cable TV pornography, indicating widespread consumer interest and producer capability, but we know almost nothing about the psycho-social impacts of this kind of viewing.) We nave only limited data on the impact of sex role and ethnic and age role stereotyping on children's development.

We still have a little time -- perhaps two years -- before the new technology of much expanded TV channel capacity combined with computers reaches massive home use. We should use this brief respite immediately for psycho-social and economic impact research and evaluation of the still uncommon use of the new combined technology, before it reaches most households the way simple TV and computer games already have.

We can only thank the political and economic complications for this brief respite, as they temporarily impede widespread use of cable TV. The implementation, planning, marketing, and production problems involved in massive dissemination of the new interactive TV/computer technology also limit its rate of diffusion, but probably not as much as the political, regulatory, and economic uncertainties. On the supply side, perhaps only the "software gap" of insufficient program and selection logic is as time-limiting a factor as the demand and regulatory uncertainties.

The principal policy issues today for decision by governments, industry and individual families, have involved the control of <u>who uses what, when, and how much</u>. We are here concerned most with children from infancy to the teens watching (and now manipulating) program materials that may or may not be helpful to their social and mental health, education, happiness, and eventual productive employment, and whether a reasonable limit of daily time devoted to this new activity should be more, the same, or less than the current 1-2 hour estimate of what's healthy, and the 2-4 hour estimate of what is actual.

The most urgent <u>government policy issues</u> of regulation and R&D support should be resolved on the basis of social sciences policy research directed at

answering these research questions objectively:

1. What are the current known impacts of TV and computer games on children and families, in terms of children's cognitive, affective, and social development, as a function of the amount and kind of current programs and computing technology consumed?

2. What aspects, if any, of the new TV/computer technology affect child development and families positively and negatively? (Psychosocial research) What better alternative learning sources will be available?

3. What will be the probable consumer demand (including child demand) for industry supply of the new technology? (Sociological and economic research) What will be the demand for and supply of alternative materials?

4. What has been the impact of different kinds and degrees of federal and local government regulation on the kind, quantity, quality, and public acceptability of TV, and of the regulated TV on children and families in the U.S., compared with England, France, Italy, Germany, Mexico and Sweden? (Cross-cultural research comparing "wide open" unregulated TV in Italy to controlled, government-dominated TV in France, for example).

5. What combination of economic incentives and government regulations will maximize the positive social impacts and minimize the negative impacts of the new technology? (Economics and political science research)

6. What public education and/or training of parents as well as children is desirable to enhance the educational effects of the new technology and minimize the antisocial impacts? (Educational and public opinion research)

7. What are the impacts of TV viewing and computer manipulation on children's <u>political attitudes</u> formation and <u>concepts of equity</u>? (Political, sociological and psychological research).

The most urgent <u>industry</u> policy issues of market research and forecasting, product design, government and consumer relations, financing, and marketing should also be resolved on the basis of policy research directed toward <u>anticipating the answers to the government social policy research</u>

questions on the previous page, and answering the following industry-specific research questions:

1. Why are current pro-social TV programs (such as educational after-school specials) money-losing, while educationally less productive pure entertainment programs (such as Saturday morning cartoons) are profitable? Has it always been, and must it always be this way? (Business research)

2. What program content is both economically viable, in terms of consumer and advertiser demand and production cost, and at least non-harmful or in the net developmentally helpful for children, at the intensities of child access likely for most households? (An adult example might be the Lou Grant Show.) (TV social impact and market research)

3. What program content-creative development strategies can be designed to meet both the developmental needs of children and the consumer popularity and advertising payoff needs of commercial broadcasters?

4. How can program scheduling, rating schemes, and consumer selection access be designed to limit children's access to program materials believed to be unhelpful or even harmful to their healthy development, given VTR's and other new developments?

5. What is the foreign competition going to be offering in home TV/computer hardware, software, and programs? Already we have major foreign competition in TV and home-computer hardware, Japan is rapidly entering the computer software market, and the British compete effectively with TV programs from the BBC such as Masterpiece Theatre.

6. What are the foreign markets for American TV/computer hardware, software, and programs? Already our large computers, films, and records dominate these markets -- will our new software and programs do as well abroad, or meet stiffer local competition.

7. What can industry do to develop and market profitable -- and hence survivable -- commercial sponsorship of highly educational TV and computer programs, such as Sesame Street and programmed instruction in sciences and language arts?

The individual consumer and family decisions of what equipment to buy and how to use and control it in a developmentally fruitful way in households with children should depend on the honest and thorough dissemination of the social research answers to the above research questions. Government and industry both have an obligation to consumer parents and children to inform them of the possible impacts of the new technology as a function of how it is used, how much, and with what age and condition of children.

The developmentally optimum TV viewing strategy for children of different ages and capabilities is by no means clear from current and previous research. Opinions range from use limited to educational programs only, to almost unlimited access to violent and sexual adult programs, from only a few special hours a month to as much as 100 hours monthly viewing time, and from limiting access to academically superior children to open and equal access for all. Concerning computer games and other computer use by children, most individuals do not have views on this still only modestly investigated phenomenon.

We have estimates that "on average, preschool children watch almost 33 1/2 hours of television a week. School-age children watch over 29 hours per week."[1] "Children whose families have low socioeconomic status and children who have low academic achievement spend more time watching television than others."[2] The latter finding replicates very closely the result of research on the impact of motion picture viewing executed in the 1930's. and now as then no reliable indications of the direction of the relationships between excessive viewing and low academic performance have been obtained. We don't know whether problem children decide to watch more movies and TV, or whether watching more violence and sex in more movies and TV creates problem children, or whether and how the two feed back on each other.

"Educational (TV) programming appears to provide considerable benefits to children," the FCC says.[3] Compared to what? Compared to the conversation with parents or near-peers? Compared to reading? Compared to hobby activities? Those comparisons have not been systematically researched. Compared to nothing? Yes, compared simply to nonviewers. But that is like comparing candy to no food at all for relative nutritional value.

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[1]Quoted from A.C. Nielson Co., Child and Teenage Television Viewing (1978) in Television Programming for Children: A Report of the Children's Television Task Force, F.C.C., October 1979, p.18.

[2]Ibid, p.18

[3]Ibid, p.19

That does not really assure that even the best educational TV such as Sesame Street is the best educational or developmental use of children's available time -- only that it is often better than even less attractive alternatives. This finding is also limited to children in kindergarten through the second grade, and we have yet to see the good programs or good results replicated for older and younger children.[4]

Research by Lefkowitz and others on the relationship of violent behavior to the amount of viewing of violence on TV indicated a weak correlation (0.3) operating stably from the third through the eighth grade to high school graduation. This was a relatively large sample (about 1000) study. Unfortunately we are left with much of the ambiguity attending the 1930's (Hartshorne and May) studies of film violence effects on children's violent behavior -- we do not know which is cause and which is effect, or how they interact.

We also do not know whether TV's worst offense against healthy child development is simply the massive waste of children's time (and parents' too) during those "magic years." Even if TV doesn't make children violent or dopey, could it impose opportunity costs of the better developmental experiences missed? This should be researched with developmental impact studies of alternative family time budget.

A complaint frequently made about contemporary television programming is that advertiser-supported broadcasters have too little economic incentive to provide appropriate programs for children during weekday evenings. Some technological enthusiasts have asserted that new "asynchronous communication" devices such as videotape recorders can solve this scheduling problem. Children's programs could be recorded in advance by one's handy Betamax, carefully selected for maximum developmental benefit by conscientious parents.

I recently had occasion to learn that video-tape recorders, computerized interactive programming, and other devices for expanding view options unconstrained by broadcast or bedtime schedules can have perverse effects on the intended increase in educational quality of selection. My son Thomas, age 7, was very interested in hearing me discuss the possibilities of purchasing a VTR with my wife. My hope had been that I could select and record the most educational material on TV at any hour, and use it to replace the popular but violence-laden trivia in his Saturday morning cartoons. My son had something else in mind for

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[4] Gerald S. Lesser, Children and Television: Lessons from Sesame Street (Random House, New York, 1974).

the VTR, however. He immediately conceived the idea that with such a device he would now be able to record all the cartoons and the crime and violence shows he had been missing because of bedtime and total viewing time constraints. His final bargaining position on the Betamax was that he would be willing to consider viewing two programs I had recorded if he could record eight of his own choice. At that replacement rate, I concluded, he would be replacing my "good stuff" with his favorite junk entertainment faster than the converse. So much for my hopes for improving his TV mind with VTR's. It could have been even worse with interactive cable TV.

Which brings me to an underlying pervasive social issue which I would like to persuade policy-makers and researchers to address seriously with long-term experimental research, and that is the role of diverse entertainments in general in the education, training, and socialization of children and youth. The coming new TV computer technology will inevitably increase the access of children to all kinds of entertainment -- old and new movies, sports events, theatre and concerts, etc. The access will be more emotionally compelling, physically convenient, and less adult-supervised than any library or theatre experiences of the past. What we are really on the threshold of is an unprecedented expansion of general cultural access by children and youth. One could find as much support for benign joy at this prospect as for protective anxiety.

Underlying the joy would be the optimistic faith that most of our culture is good, benignly motivating, and the more children learn about all of it the better individuals, parents, friends, mates, workers, and citizens they will be. Also underlying this optimistic faith is the belief that given convenient access to all cultural materials, healthy children will select developmentally sound programs and not become fascinated with violence, evil, pronography, or time-wasting trivia.

Underlying the protective anxiety, on the other hand, is the awareness that there is much evil to be learned about and with our culture, and it has its own natural human fascinations for even the majority of healthy minds, both children's and adults'.

If we wish to guard our children against the too-early and pervasive exposure to violence, corruption and the reduction of subtly sexual romance to socially unrewarding simplifications, then we probably cannot do it by controlling any one medium or subject -- we must change our culture.

Even children who see almost no TV or movies indulge in play simulating violence. To bar the modeling of violent behavior we would have to bar violence not just from TV but from all of TV's program sources -- we would have to bar violence from films, books, music, newspapers, from events themselves, indeed from our very lives! How can we do that?

What we can do to both nurture and protect our children with the new TV/computer technology is to do our research homework on its impacts, before supporting full and uncontrolled dissemination, and then to modify its forms, contents, and usage by socially responsible policies based on scientific research that will make widespread use of the new technology economically and socially productive for producers and consumers. We owe it to the kids!